



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/009,455	01/20/1998	RANDELL L. MILLS	9113-20US	7444

7590 02/09/2005

FARKAS & MANELLI, PLLC  
2000 M STREET, N. W.  
7TH FLOOR  
WASHINGTON,, DC 200363307

EXAMINER
----------

TSANG FOSTER, SUSY N

ART UNIT	PAPER NUMBER
----------	--------------

1745

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/009,455

Applicant(s)

MILLS, RANDELL L.

Examiner

Susy N Tsang-Foster

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 May 2004 and 21 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-281 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-281 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 20041221.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: See Continuation Sheet.

Continuation of Attachment(s) 6). Other: Appendix-Examiner Bernard Souw's answer to R. Mills' response to Souw's appendix.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions filed on 5/28/2004 and 12/21/2004 have been entered.

### ***Information Disclosure Statement***

2. The information disclosure statement filed on 12/21/2004 has been considered by the Examiner.

### ***Response to Amendment***

3. This Office Action is responsive to applicant's response filed on 12/21/2004 and 5/28/2004. Claims 1-281 are pending. Claims 1-281 are finally rejected for the reasons of record.

### ***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Art Unit: 1745

5. Claims 1-281 are rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and therefore lacks utility.

See the reasons given in the previous Office Actions (paper #43 mailed on 12/3/2003, paper #40 mailed on 9/9/2002, paper #24 mailed on 7/5/2001, and paper # 20 mailed on 9/1/2000).

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1-281 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

See the reasons given in the previous Office Actions (paper # 43 mailed on 12/3/2003, paper #40 mailed on 9/9/2002, paper #24 mailed on 7/5/2001, and paper # 20 mailed on 9/1/2000).

***Response to Arguments***

8. Applicant's arguments filed 5/28/2004 and 12/21/2004 have been fully considered but they are not persuasive.

As stated in the previous office actions, applicant's claimed invention is based on the existence of the hydrino atom which is contrary to the known laws and theories of chemistry and physics. Applicant's theory of the hydrino atom predicts a new form of the hydrogen atom having energy states represented by fractional quantum numbers that are below the conventional ground state of the hydrogen atom. These energy states having fractional quantum numbers are contrary to the conventionally accepted energy states of the hydrogen atom having positive integer quantum numbers predicted by quantum mechanics that have been successfully verified by decades of independent, reproducible experimental results as stated in ATTACHMENT TO RESPONSE TO APPLICANT'S ARGUMENTS in paper #24 mailed on 7/5/2001 (hereinafter referred to as "ATTACHMENT in paper #24).

With respect to applicant's recent response, applicant mostly repeats his previous arguments which have been addressed by the Examiner as seen in all of the previous responses to applicant's arguments. Therefore, all of the Examiner's previous responses to applicant's arguments of record, and the appendixes included in all the previous office actions to support the Examiner's arguments are incorporated by reference in their entirety into this present response to applicant's arguments. Since applicant's arguments on theoretical and experimental grounds are the same as those presented in copending case 09/009,837, the Appendix written by Examiner Bernard Souw for copending case 09/009,837 is also attached to this present office action.

All of the Examiner's previous office actions and the present attached appendix by Examiner Bernard Souw explain over and over again why applicant's theory is mathematically

Art Unit: 1745

and physically flawed. Applicant's flawed theory cannot predict the existence of the hydrino and conventional quantum mechanics forbids the theoretical existence of the hydrino. It is also illogical for the applicant to analyze his own experimental data using his flawed hydrino theory to prove the existence of the hydrino atom as stated in the previous office actions. Since applicant's theory is scientifically and mathematically flawed, there is no theoretical foundation for the hydrino atom and all of applicant's data cannot prove what is not theoretically possible. All of applicant's own experimental evidence of record detract from the central issue that the hydrino does not theoretically exist.

Applicant in his present response continues to misinterpret his own evidence of record and cited prior art. The applicant also continues to misinterpret the Examiner's statements. The discussion below and the attached appendix illustrate some of applicant's misinterpretations.

With respect to applicant's response on 12/21/2004 regarding his NMR data, the applicant modifies his own NMR evidence of record by submitting a new declaration by Dr. Turner signed on 8/24/2004. In the previous office action, the Examiner rebutted applicant's conclusion that the upfield shifts in his NMR data are due to the alleged novel hydrino compound by responding that contaminants such as  $\beta$ -MgNiH have the same upfield shifts. In the previous office action, the Examiner pointed out that Dr. Turner's original declaration filed on 5/18/2000 states that he has never observed shifts in the region of -4 to -5 ppm in his 20 years of practicing NMR spectroscopy since 1978 except in applicant's samples (a copy of the declaration was attached to the previous office action). Just because Turner himself never

Art Unit: 1745

observed shifts in the region from  $-4$  to  $-5$  ppm does not provide positive evidence that these are due to novel compounds and not due to any previously known compounds. The Examiner rebutted this statement in Turner's original declaration by citing references to Hayashi (Hayashi, S. et al. (1997) "Accurate determination of  $^1\text{H}$  Knight shifts in  $\text{Mg}_2\text{NiH}_x$  and  $\text{MgH}_x$  by means of high-speed magic angle spinning," *Journal of Alloys and Compounds*, vol. 248, pp. 66-69 (Paper A); Hayashi, S. et al. (1997) " $^1\text{H}$  NMR and magnetization measurements of a nanostructured composite material of the  $\text{Mg}_2\text{Ni}$ -H system synthesized by reactive mechanical grinding," *Journal of Alloys and Compounds*, vol. 256, pp. 159-165 (Paper B); Hayashi, S. et al. (1997) "Local structures and hydrogen dynamics in amorphous and nanostructured Mg-Ni-H systems as studied by  $^1\text{H}$  and  $^2\text{H}$  nuclear magnetic resonance," *Journal of Alloys and Compounds*, vol. 261, pp. 145-149 (Paper C)) which show that  $\beta$ -MgNiH has transitions in the  $-4$  to  $-5$  ppm region (see p. 48 of "ATTACHMENT in paper #24").

In response to the Examiner's evidence dated 7/5/2001 that  $\beta$ -MgNiH have transitions in the  $-4$  to  $-5$  ppm region, Turner now qualifies his original statement in the new declaration by adding a new paragraph that the shifts observed in the region from  $-4$  to  $-5$  ppm are only known to be due to transition metal hydrides such as  $\beta$ -MgNiH but that Ni and Mg were not detected in applicant's sample. Turner does not provide any additional evidence besides relying on the Examiner's provided evidence of  $\beta$ -MgNiH to support his general statement that shifts in the region from  $-4$  to  $-5$  ppm are only known to be due to transition metal hydrides. Turner's current statement now reflects the evidence provided by the Examiner that  $\beta$ -MgNiH have transitions in the region of  $-4$  to  $-5$  ppm. Turner does not provide any solid evidence to support his general statement that upfield shifts in the  $-4$  to  $-5$  ppm region are known only to be



Art Unit: 1745

due to transition metal hydrides. It is inaccurate and illogical to extrapolate a piece of prior art provided by the Examiner showing  $\beta$ -MgNiH having shifts in the  $-4$  to  $-5$  ppm to the general statement that upfield shifts in the  $-4$  to  $-5$  ppm region are known only to be due to transition metal hydrides.

Furthermore, applicant's and Turner's assertions that there are no contaminants in the sample are not convincing because these samples were not purified after the synthesis process. Applicant's experimental syntheses of  $\text{KH}^*\text{Cl}$ ,  $\text{KH}^*\text{Br}$ , and  $\text{KH}^*\text{I}$  were made from the corresponding alkali halide KCl, KBr, and KI using potassium metal as the catalyst and each compound was prepared in a stainless steel glass cell comprising a Ni screen hydrogen dissociator, catalyst, and alkali halide or alkaline earth hydride (see Experimental section on pp. 966-967 of applicant's paper, Mills et al., "Identification of compounds containing novel hydride ions by nuclear magnetic resonance spectroscopy", International Journal of Hydrogen Energy 26 (2001) pp. 965-979). Ni was used as a hydrogen dissociator and can easily be present as a contaminant such as a nickel hydride containing compound in the resulting products. Turner states in the letter dated August 10, 2004 that the only compounds known to have chemical shifts at  $-4.1$  and  $-4.5$  ppm are transition metal hydrides. Therefore, it is the Examiner's position that the peaks at  $-4.1$  ppm and  $-4.5$  ppm can be due to minute amounts of contaminants such as a transition metal hydride containing compound in applicant's samples.

Turner's new declaration signed on 8/24/2004 and filed on 12/21/2004 in the present response is different from his original declaration in changing the pulse angle from 15 to 35 in paragraph 7 and adding the new paragraph:

Art Unit: 1745

“For sample 080304BLP1, in the  $^1\text{H}$  MAS NMR spectrum two unusual signals were observed, at  $-4.1$  and  $-4.5$  ppm. The only compounds known to have chemical shifts in this region are transition metal hydrides, in particular  $\text{Mg}_2\text{NiH}_4$ . Elemental analysis (Galbraith Laboratories, Inc., Knowville, TN) showed that Mg and Ni are not detected in this sample, and that K was the main metal present. Earlier NMR data has shown that the hydride of K appears at about  $1.0$  ppm. Therefore, these results suggest that the signals at  $-4.1$  and  $-4.5$  ppm represent a novel species, and do not correspond to any known metal hydride.”

This new paragraph in Turner’s declaration does not provide conclusive support that these upfield shifts are due to a novel species because all possible known transition compounds other than those including Ni that could have upfield shifts in this region have not been ruled out by the applicant or Turner. This new paragraph only states that K was the main metal present. It is silent about what other metal elements, especially transition metal elements, are present in this sample provided by the applicant. Furthermore, it is also possible that a previously unstudied, ordinary, non-transition metal hydride compound having upfield shifts is present in the sample.

Finally, applicant and Turner both agree that conventional transition metal hydrides have upfield shifts in the  $-4$  to  $-5$  ppm region. Since these NMR signals are due to the hydrogen atom themselves in these conventional transition metal hydrides as measured by solid state proton NMR, and the position of the signal reflects the surrounding electronic environment of the hydrogen proton, the upfield shifts in these known conventional transition metal hydrides are due to hydrogen protons in a certain electronic environment surrounding the hydrogen protons and are not due to any novel states of the hydrogen atom in the conventional transition metal hydride compounds. Therefore, upfield shifts of protons in solid state proton NMR are known to be due

Art Unit: 1745

to the electronic environment of the hydrogen proton that do not involve hydrino form of the hydrogen atom. Hydrinos are not necessary to explain the upfield shifts observed by solid state H NMR as evidenced by known transition metal hydrides having these upfield shifts in the same region.

With respect to applicant's assertion on pages 58-95 of the present response that there are 51 independent test results, a close examination of these 51 independent test results are mostly applicant's own work or those of his collaborators as stated and addressed in sections 19-25 of the ATTACHMENT IN PAPER #24 and in Part I of the attached appendix. Applicant's own work and those of his collaborators cannot be considered independent test results.

With respect to applicant's allegations on page 106 of the response of the Examiner being biased by Quantum Mechanics (QM), this issue is addressed on pages 33-34 of the attached appendix.

With respect to applicant's assertion on page 122 of the present response that his predicted previously unknown lower-energy hydrogen having fractional quantum numbers do not contradict, but rather, supplement the well-known higher energy states of hydrogen having integer quantum numbers, the Examiner disagrees for reasons given in sections 9 and 10 of the ATTACHMENT IN PAPER #24 that quantum mechanics forbids fractional quantum numbers for the energy levels of the hydrogen atom. Applicant's statement misinterprets conventional quantum mechanics which forbids these fractional quantum numbers in hydrogen atoms.

Applicant asserts on page 123 of the response that the Examiner's "conventional acceptance" standard introduces all sorts of inherent problems, among them the required degree of acceptance by the scientific community and the great length of time it often takes for such

Art Unit: 1745

acceptance to take hold and that the Examiner's odd position appears to be that discoveries that are so novel as to require years to be scientifically accepted such as the Einstein's theory of relativity took decades to gain acceptance, is a sufficient basis for denying patent protection for inventions based on those discoveries. The applicant also asserts that the conventional acceptance standard is not supported by legal authority and that applicant can cite to any number of inventions that were granted patented protection based on unconventional approaches to well known problems.

In response, applicant appears to be admitting and agreeing with the Examiner that his theory has not been accepted by the scientific community. Moreover, applicant states on page 123 of the present response that he "does not dispute the fact that until he put forward his novel theory, no established modern theory of science predicted the existence of lower energy states of hydrogen" and that all that proves is "the absolute novelty of Applicant's claimed invention, thus providing an additional basis for why Applicant is entitled to a patent". However, applicant appears to be misinterpreting patent law and legal precedent. Applicant's example of Einstein's theory of relativity is irrelevant because Einstein did not seek to and could not patent his discovery of the laws of nature (see the text of 35 USC 101). Furthermore, legal precedent in conjunction with patent law (see MPEP 2107.01) deny patentability of an invention that is inconsistent with known scientific principles such that the utility asserted by the applicant is thought to be incredible in the light of the knowledge of the art. *In re Citron*, 325 F.2d 248, 253, 139 USPQ 516, 520 (CCPA 1963).

A good example of a novel "discovery" is cold fusion that can take years to (or never) be accepted by the scientific community and currently, the court has held that an invention based on

Art Unit: 1745

cold fusion is not patentable because cold fusion is not a credible process of producing energy. *In re Swartz*, 232 F.3d 862, 56 USPQ2d 1703, (Fed. Cir. 2000). The applicant's argument that unconventional approaches to well known problems have been patented is not persuasive because these unconventional approaches are not inconsistent with known scientific principles whereas applicant's theory of the hydrino atom is inconsistent with known scientific principles and has not been accepted by the scientific community. Therefore, the Examiner's position denying patentability of applicant's incredible invention that is inoperative and lacks utility (under 35 USC101) is not odd but it is in agreement with office policy (see MPEP 2107.01) rooted in patent law and legal precedent.

With respect to astrophysical data as support of his hydrino theory, applicant continues to misinterpret the data of Labov and Bowyer on pages 126-129 of the present response where applicant assigns transitions observed by Labov and Bowyer as being due to the hydrino. The astrophysical data provided by Labov and Bowyer can be explained by conventional science without the need to use applicant's scientifically implausible theory of the hydrino atom. According to the document titled "Hydrocatalysis Technical Assessment, Prepared for Pacificorp, prepared by Technology Insights, dated August 2, 1996", submitted by applicant on 7/17/2002 in copending application 09/669,877, Labov and Bowyer dispute applicant's interpretation of their data. The applicant of the present application is the founder of Hydrocatalysis Power Corporation (HPC) now known as Blacklight Power, Inc. Pages 20-21 of the document states that spectral data taken from the reference S. Labov and S. Bowyer, "Spectral Observations of the Extreme Ultraviolet Background", The Astrophysics Journal, 371,

Art Unit: 1745

810 (1991), were evaluated by HPC for indications of hydrino. HPC assigned peaks in the wavelength region of 80 to 650 Å to hydrino transitions. As shown in Table 4-1 on page 21 of the document, the HPC assignments contradict the alternative assignments made by the authors of the paper.

Page 21 of the document also states that Bowyer (an astrophysicist and author of the astrophysics journal paper cited above) disputed the HPC interpretation of the data and that the paper on the HPC interpretation submitted to the Astrophysical Letters and Communications was not accepted for publication. The document also states on page 21 that the low energy hydrogen concept and its implications regarding data interpretation has not received general review or acceptance by the astrophysics community. Thus, applicant's assertions regarding the existence of hydrino based on observations of radiation spectra from space, i.e., astrophysical data, have not been accepted by the astrophysics community as evidenced by the document submitted by applicant on 7/17/2002 in copending application 09/669,877 since a more credible scientific alternative exists to explain the spectral data.

In response to applicant's assertions that the explanation given by Labov and Bowyer are not credible, applicant does not give any reasons why the astrophysicists' explanation of their own data is not credible. Applicant also asserts that the authors' data matches hydrinos. In response, a paper by Aaron Barth cited in the attached appendix disputes applicant's assignment of the Labov and Bowyer data to hydrino transitions (A.J. Barth, "Bigger Than Fire?", SKEPTIC Vol.8, No.4, 2001).

Applicant continues to misinterpret quantum mechanics (QM) on pages 130-147 of the present response. These misinterpretations are rebutted in Part II of the attached appendix and

Art Unit: 1745

have been rebutted in all of the arguments made by the Examiner in the previous Office actions and previous attached appendixes to the Office actions.

Applicant's arguments on pages 163-173 of the present response with respect to the plasma references cited by the Examiner show that he has seriously misinterpreted the Examiner's statements and that he does not understand the crucial point that the Examiner made in the previous office action regarding applicant's anomalous line broadening data. The Examiner's main point was that microwave plasma experiments containing hydrogen and one of Ar or He do not cause anomalous line broadening in contrast to applicant's data and applicant does not explain why the microwave experiments of Luque and Luggenhoelscher do not cause anomalous line broadening even though hydrogen and Ar or He (H, Ar, and He are regarded as a catalyst in applicant's experiments and theory) are present in the experiments. According to applicant's arguments and his data, a plasma containing Ar and hydrogen would show anomalous line broadening due to the resonance transfer mechanism of Ar with hydrogen but this anomalous line broadening effect was absent in the microwave experiments of the prior art cited by the Examiner.

It is crucial to note Luque did not observe Ar catalyzing hydrogen atoms in his microwave discharge experiments (that would be evidenced by anomalous line broadening according to applicant's arguments) in direct contrast to applicant's microwave discharge experiments with Ar and hydrogen and applicant does not deny that Luque did not observe anomalous line broadening in his microwave experiments containing Ar and hydrogen.

Art Unit: 1745

Applicant has also seriously misinterpreted the Examiner's plasma arguments by incorrectly comparing the Examiner's cited line broadening of 0.16 nm in the prior art with >100 eV hot H found in applicant's rt-plasmas. Due to applicant's misinterpretation of the Examiner's statements, the data of the prior art and his own data, he incorrectly states that the line broadening observed in Luggenhoelscher is off by six orders of magnitude as compared to applicant's observed line widths on page 169 of the present response. The applicant's misinterpretation of the Examiner's remarks on his plasma data, those of the cited prior art, and his own data are detailed on pages 6-12 of the attached appendix (Part I, section B (subsections d.1-d.6, e, and f)).

As explained in Part I of the attached appendix, applicant's assertion of anomalous line broadening in his plasma data due to the resonance transfer (r-t) mechanism is not plausible because there are alternative, conventional explanations for this increased line broadening. The plasma sheath effect offered by the prior art is a more plausible explanation for the increased line broadening than applicant's rt mechanism involving the postulated hydrino (see E. Kovacevic et al., "The Dynamic Response of the Plasma on the Dust Formation in Ar/C<sub>2</sub>H<sub>2</sub> RF Discharges" at [http://www.icpig.uni-greifswald.de/proceedings/data/Kovacevic\\_1](http://www.icpig.uni-greifswald.de/proceedings/data/Kovacevic_1) and Cvetanovic et al., *J. Appl. Phys.* 97, 033302-1, 2005 that are both cited in the attached appendix).

In the Cvetanovic reference cited in the attached appendix, those of ordinary skill in the art in the plasma field do not agree with the rt mechanism proposed by the applicant to explain the anomalous broadening in the hydrogen Balmer alpha line (see abstract and pages 033302-1 to 033302-2 of the reference). Instead, the reference states that the excessive Balmer alpha line



Art Unit: 1745

broadening is related to the collisions of the fast hydrogen atoms with molecular hydrogen and can be explained by the conventional collision model (CM).

The Cvetanovic reference also states that two independent experiments performed simultaneously in two different laboratories have not been able to reproduce the applicant's excessively broad Balmer line shapes in microwave induced discharge (MID) experiments (see page 033302-2, left hand column). These laboratories did not detect excessive broadening in the MID experiments. This is contrary to applicant's assertions on page 158 of the present response that the plasma data results have been independently reproduced.

As pointed out on page 33302-2 of the Cvetanovic reference, applicant's own plasma results contradict his own theory since his plasma data containing pure H<sub>2</sub> only does not show any anomalous line broadening that is inconsistent with his own theory and argument that two hydrogen atoms (that act as a catalyst) can provide a net enthalpy equal to the potential energy of the hydrogen atom (27.2 eV) which is the necessary resonance energy for a third hydrogen atom. As shown in Figures 6, 8, 12, and 14 of applicant's document entitled "Comparison of Excessive Balmer  $\alpha$  Line Broadening of Inductively and Capacitively Coupled RF, Microwave, and Glow Discharge Hydrogen Plasmas with Certain Catalysts" that was submitted to IEEE Transactions on Plasma Science and cited in the information disclosure statement filed on 8/22/2002 in copending case 09/009,837, there is no anomalous line broadening for microwave plasmas of pure hydrogen alone which contradict applicant's own theory and arguments.

Thus, in view of the serious flaws in applicant's theoretical foundation for his invention, the lack of independent, reproducible experiments to verify the existence of the hydrino atom,

Art Unit: 1745

and the lack of conventional acceptance of the existence of the hydrino atom which is contrary to the accepted scientific theory of the hydrogen atom, applicant has failed to provide preponderance of evidence to support his claims.

*Conclusion*

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

-----  
Any inquiry concerning this communication or earlier communications should be directed to examiner Susy Tsang-Foster, Ph.D. whose telephone number is (571) 272-1293. The examiner can normally be reached on Monday through Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at (571) 272-1292.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Art Unit: 1745

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

st/ *Susy Tsang-Foster*

Susy Tsang-Foster  
Primary Examiner  
Art Unit 1745